[P-2070-US] **S/N 09/412,612**

CLAIMS PENDING AS OF June 5, 2003

1. (Cancelled)

2. (Twice Amended) The method according to claim 30, wherein said at least one printing head includes first and second printing heads and wherein said first photopolymer and second photopolymer are dispensed from said first and second printing heads, respectively.

3. (Three Times Amended) The method according to claim 30, wherein the first photopolymer has a first modulus of elasticity, further comprising the step of:

curing said first photopolymer for a first period of time and at a first radiation wavelength to obtain said first modulus of elasticity.

4. (Three Times Amended) The method according to claim 30, wherein the second photopolymer has a second modulus of elasticity, the method comprising the step of:

curing said second photopolymer for a second period of time and at a second radiation wavelength to obtain said second modulus of elasticity.

5. (Three Times Amended) The method according to claim 30, wherein said step of combining includes the step of:

adjusting the relative proportions of said first and second photopolymers so that said third material has a third modulus of elasticity.

6. (Cancelled)

7. (Cancelled)

8. (Three Times Amended) The method according to claim 30, wherein said third material comprises approximately 95 to 100% of said first photopolymer and 0 to 5% of said second photopolymer, wherein said third material forms a model layer for forming the model.

9. (Three Times Amended) The method according to claim 30, wherein said third material is comprised of approximately 0 to 5% of said first photopolymer and approximately 95 to 100% of said second photopolymer, wherein said third material forms a support layer.

10. (Twice Amended) The method according to claim 30, wherein said first photopolymer is a different color than said second photopolymer.

11. (Twice Amended) The method according to claim 30, wherein said first photopolymer is transparent.

12. (Twice Amended) The method according to claim 30, wherein said second photopolymer is transparent.

13. (Cancelled)

14. (Twice Amended) The system according to claim 34 further comprising an electromagnetic radiation source for curing at least one of said photopolymers.

15. (Three Times Amended) The system according to claim 14 wherein said first photopolymer has a first modulus of elasticity and said second photopolymer

has a second modulus of elasticity and said electromagnetic radiation source includes at least:

a first electromagnetic radiation source for curing said first photopolymer for a first period of time and at a first radiation wavelength to obtain said first modulus of elasticity; and

a second electromagnetic radiation source for curing said second photopolymer for a second period of time and at a second radiation wavelength to obtain said second modulus of elasticity.

23 16. (Twice Amended) The system according to claim 20 34, wherein said printing head includes first and second printing heads and wherein said first photopolymer and second photopolymer are dispensed from first and second printing heads, respectively.

17. (Cancelled)

24 18. (Once Amended) The system according to claim 20 34 further comprising a positioning apparatus coupled to said controller for selectively positioning said first and second printing heads by commands from said controller.

25 19. (Twice Amended) The system according to claim 20 34, wherein said first and second photopolymers are curable by the application of any one of a group including ultra-violet radiation, infra red radiation and E-beam.

26 20. (Twice Amended) The system according to claim 20 34, wherein said first photopolymer is a different color than said second photopolymer.

27 21. (Twice Amended) The system according to claim 20 34, wherein said first photopolymer is transparent.

28 22. (Twice Amended) The system according to claim 20 34, wherein said second photopolymer is transparent.

23. (Cancelled)

37 24. (Twice Amended) The system according to claim 36, wherein said printing head includes a plurality of printing heads and wherein each of said plurality of photopolymers are dispensed from a different one of each of said plurality of printing heads.

25. (Cancelled)

26. (Cancelled)

38 27. (Twice Amended) The system according to claim 36 wherein said photopolymers have different moduluses of elasticity.

39 28. (Twice Amended) The system according to claim 36, further comprising a dispenser for dispensing transparent photopolymer.

40 29. (Twice Amended) The system according to claim 36, wherein said photopolymers are curable by the application of any one of a group including ultra-violet radiation, infra red radiation and E-beam.

1 30. (Three Times Amended) A method for three-dimensional printing of a model, said method comprising:

dispensing a first photopolymer and a second photopolymer from at least one printing head in variably selectable proportions, said first photopolymer and sais second photopolymer being different;

said first photopolymer and said second photopolymer mixing within the same layer to produce a layer of third material, said third material being a photopolymer having prerequisite hardness and modulus of elasticity.

11 31. (Once Amended) The method of claim 1 30, wherein the first photopolymer has a first modulus of elasticity and wherein the second photopolymer has a second modulus of elasticity.

12 32. (Twice Amended) The method according to claim 1 30, wherein said third material forms a model layer, the method comprising:

combining said first and second photopolymers to form a support layer, said support layer having a lower modulus of elasticity than said model layer.

13 33. (Once Amended) The method according to claim 12 32 wherein said support layer includes at least a plurality of release blocks.

10 34. (Three Times Amended) A system for three-dimensional printing of a model, the system comprising:

at least one print head;

at least first and second dispensers connected to said at least one printing head for dispensing at least first and second photopolymers respectively in variably selectable proportions, said first photopolymer and said second photopolymer being different; and

a controller connected to said at least one printing head to cause said at least one printing head to dispense said first photopolymer and second photopolymer, so that said first photopolymer and second photopolymer mix within the same layer to produce a layer of third material, said third material being a photopolymer layer having prerequisite hardness and modulus of elasicity.

19 35. (Twice Amended) The system according to claim 20 34 wherein first and second photopolymers are combined into build layers and support layers, said build layers and support layers each including differing proportions of said first and said second photopolymers.

36. (Three Times Amended) A system for three-dimensional printing of a model, the system comprising:

at least one printing head, having a plurality of nozzles;

a plurality of dispensers connected to said at least one printing head for dispensing a plurality of different photopolymers, each photopolymer having a different color; and

a controller connected to said at least one printing head for combining said plurality of photopolymers in variably selectable proportions; said plurality of photopolymers mixing within the same layer to produce a layer of third material.

41 37. (Once Amended) The system of claim 36 comprising an electromagnetic radiation source for curing at least one of the photopolymers.

42 38. (Once Amended) The system according to claim 37 wherein said electromagnetic radiation source includes a first electromagnetic radiation source for curing at least one of said photopolymers for a first period of time and at a first radiation wavelength to obtain a first modulus of elasticity.

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14 39. (New) The method of claim 30, comprising repeating said dispensing and combining steps to construct multiple layers of a three-dimensional model.

30 40. (New) The system of claim 34, wherein said controller is operative to cause said at least one printing head to dispense said first and second photopolymers to construct multiple layers of a three-dimensional model.

43 41. (New) The system of claim 36 wherein said controller is operative to cause said at least one printing head to dispense said first and second photopolymers to construct multiple layers of a three-dimensional model.

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15 42. (New) The method of claim 30, comprising combining said first and second photopolymers to produce a support layer.

16 43. (New) The method of claim 30, comprising combining said first and second photopolymer materials to produce a model layer.

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17 44. (New) The method of claim 30, comprising combining said first and second photopolymers to produce a release layer.

18 45. (New) The method according to claim 30, comprising:

combining said first and second photopolymers to produce a support layer; and

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combining said first and second photopolymers to produce a model layer, the support layer having a lower modulus of elasticity than the model layer.

46. (New) The method according to claim 30, comprising:

combining said first and second photopolymers to produce a release layer; and

combining said first and second photopolymers to produce a model layer, the release layer having a lower modulus of elasticity than the model layer.

47. (New) The system of claim 34, wherein said third material forms a support layer.

48. (New) The system of claim 34, wherein said third material forms a model layer.

49. (New) The system of claim 34, wherein said third material forms a release layer.

50. (New) The system of claim 34, wherein the controller is operative to cause said at least one printing head to dispense said photopolymers so that said photopolymers are combined to form a support layer; and

wherein the controller is operative to cause said at least one printing head to dispense said photopolymers so that said photopolymers are combined to form a model layer, the support layer having a lower modulus of elasticity than the model layer.

35 51. (New) The system of claim 34, wherein the controller is operative to cause said at least one printing head to dispense said photopolymers so that said photopolymers are combined to form a release layer; and

wherein the controller is operative to cause said at least one printing head to dispense said photopolymers so that said photopolymers are combined to form a model layer, the release layer having a lower modulus of elasticity than the model layer.